

COMMONWEALTH OF KENTUCKY  
BEFORE THE ENERGY REGULATORY COMMISSION

IN THE MATTER OF:

THE CONSIDERATION OF THE COST OF	)	ADMINISTRATIVE
SERVICE STANDARD IN SECTION 111(d)(1)	)	CASE NO. 203
OF THE PUBLIC UTILITY REGULATORY	)	(a) Kentucky Utilities Co.
POLICIES ACT	)	(b) Louisville Gas & Electric Company
		(c) Union Light, Heat & Power Company
		(d) Kentucky Power Company

ORDER

According to Section 111(d)(1) of the Public Utility Regulatory Policies Act (PURPA), the Commission is required to give consideration to and make a determination with regard to the adoption of a cost of service standard. This obligation requires an investigation as to whether rates charged a particular class of consumers can be designed to reflect the costs of providing service to such class. A thorough investigation of this sort requires the use of both embedded and marginal cost of service studies. Neither of these has been employed historically by this Commission or by many of the utilities regulated by this Commission.

This Commission views its PURPA hearings as an opportunity to acquaint itself, the utilities, and their consumers with the advantages and disadvantages, as well as the costs and benefits, of using embedded and marginal cost of service studies in the ratemaking process. However, to better understand the implications, issues and controversies that may develop, the Commission and its staff need to put themselves in a posture to not only understand the studies submitted by the utilities, but also provide alternative cost of service studies. These alternatives may involve using different computer software, different allocation factors, or a host of other differences. Obviously, much information is required. The final cost of service study is not sufficient. The studies, reports, etc. underlying the final study are required. Thus, the Commission now comes forward with its data request for Administrative Case No. 203.

The data request that accompanies this Order (see attached) was developed by Commission staff and their consultants after an examination of the 133 filings and discussions with staff at each of the covered utilities. The information requested can be separated into three response categories. The utility is responsible for determining the appropriate response category for each requested item.

The first response category is information that already is available in the form of a study, workpapers, etc. The effort involved in making this information available to the Commission is merely a duplicating effort. This information shall be forwarded to the Commission as soon as possible but no later than March 5, 1981.

The second category is information that requires some further development on the part of the utility. By March 5, 1981, the utility shall identify which information falls into this category and the date it will be provided by the company.

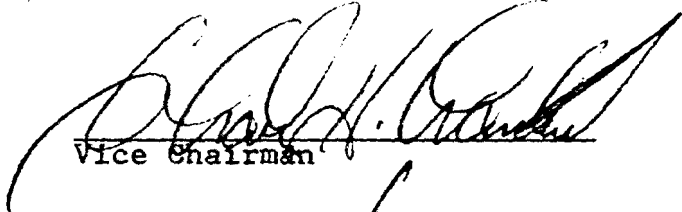
The third category is information that is not available. By March 5, 1981, the utility shall identify which information falls into this category and an explanation of why the company cannot respond to this request.

#### ORDERS

The Commission ORDERS that the utilities identified above shall supply two copies of their response to the attached data request by March 5, 1981.

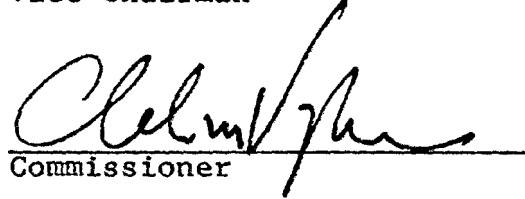
Done at Frankfort this 17th day of February, 1981.

ENERGY REGULATORY COMMISSION



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Vice Chairman



A handwritten signature in black ink, written over a horizontal line.

Commissioner

ATTEST:

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Secretary

Data Request in Administrative Case #203 (a)1. Studies

- a. A copy of the workpapers prepared by the company to determine the jurisdictional separation of plant, expenses, revenues, and taxes for test year 1979.
- b. A copy of the work papers prepared by the company to develop the allocation factors used in the class cost of service study for test year 1979. If not otherwise available, include a description of the weighting factors used in allocating metering costs, customer accounting costs, etc.
- c. The most recent analysis of the company's minimum distribution grid. Provide sufficient detail to reveal the components of the minimum grid. Specify the load that can be carried by each component.
- d. The most recent analysis and/or working papers prepared by the company to separate transmission and sub-transmission costs.
- e. A copy of the most recent load forecast study for the company. Forecasts for classes of major users are also requested if such forecasts are not included in the most recent study.
- f. A copy of the company's analysis and/or working papers supporting the selection of rating periods used in the PURPA 133 filing.
- g. A copy of the most recent loss of load probability study, or a similar study that would indicate times of day or season of the year when there are relatively high probabilities of a shortage of generation capacity.
- h. A copy of the company's most recent residential appliance saturation survey.

2. Generation and System Dispatch

- a. Provide a computer tape with the system lambda by hour for each hour in test year 1979. Similarly,

- provide a computer tape with the hourly average energy cost for each hour in the test year. The information provided should be actual historical data, if available. Provide in same format as EEI annual load information. If historical data are unavailable, provide the estimated hourly costs (for the 8,760 hours) that formed the basis for the company's response in the PURPA 133 filing, Sections 290.202 (a) and 290.303 (a). Specify the format used.
- b. Daily dispatch logs showing, on an hourly basis, system load, company load, unit outputs (by unit), and external supply (by source), if available. If daily logs for the test year cannot be provided, provide a sample of five days: a "typical" day in each season and the day of system peak.
  - c. Classify each unit as base, intermediate, or peaking depending on the unit's dispatch.
  - d. Estimate the current annual cost of one megawatt of gas turbine capacity including installation, transmission associated with power supply (e.g., step-up transmission network), and all fixed charges applicable (return, taxes, insurance, etc.). Please show the calculation in detail including the components of the fixed charge rate applied.
  - e. The fixed (annual) and variable (per kilowatt-hour) non-fuel operations and maintenance expense associated with one megawatt of new gas turbine capacity.
  - f. The company's response to Section 290.302 (g) of PURPA 133 states that the net annual cost of the generating unit or units that will be installed to meet increases in peak demand is \$168.79/kw. Describe how this figure was determined and provide the supporting calculations.

3. Distribution Information

- a. Please review the company's response to the PURPA 133 filing requirements, Section 290.305 (a) (1) and (2).

Estimate the amounts of primary and secondary level and specify the customer related portion of each of these amounts, if any. If possible, project net additions for 1983 and 1984.

- b. Provide the current cost of a residential meter, including installation.
- c. Describe the meters used for each rate class. Include the (estimated) number of customers in each class with meters capable of recording time-of-use: (1) during two periods; (2) during more than two periods; (3) magnetic tape metered customers; (4) paper tape; or (5) others.
- d. Estimate the annual cost of the following types of meters:
  1. two period energy meter
  2. three period energy meter
  3. two period energy meter with indicating demand register (recording the highest demand in the billing period)
  4. two period energy meter capable of also metering (1) the maximum demands during certain hours of the day and (2) the maximum demand in the billing period

Provide these estimates for each meter and for each voltage level (if applicable). Please specify the cost of KVAR metering in items (c) and (d). The estimates should include all installation and operating expenses. Provide workpapers supporting the estimates.

4. Miscellaneous

- a. Forecast changes in the number of customers by rate class for each of the next five years.
- b. The most recent schedule for percentage line losses by voltage level, if different from those reported in the PURPA 133 filing. Provide both energy and demand losses if available. Include any studies of losses by time-of-use.

- c. A bill frequency or similar analysis of billing determinants for each rate class. Provide billing determinants by month, if available.
- d. Provide estimates of demand elasticities (the percentage change in energy sales resulting from a one percent increase in the price of energy) used by the company. Such estimates may be used in load forecasting.
- e. A copy of contracts in effect with each intertie.
- f. A copy of each monthly bill or invoice for purchased power of interutility sales for the test year.
- g. State the date, time, and duration of each service interruption affecting customers taking interruptible service during the test year.
- h. Describe active load management programs currently in effect. Specify:
  - equipment used
  - criteria for interruption
  - number of customers by rate class

Data Request in Administrative Case #203 (b)1. Studies

- a. A copy of the workpapers prepared by the company to determine the jurisdictional separation of plant, expenses, revenues, and taxes for test year 1979.
- b. A copy of the work papers prepared by the company to develop the allocation factors used in the class cost of service study for test year 1979. If not otherwise available, include a description of the weighting factors used in allocating metering costs, customer accounting costs, etc.
- c. The most recent analysis of the company's minimum distribution grid. Provide sufficient detail to reveal the components of the minimum grid. Specify the load that can be carried by each component.
- d. The most recent analysis and/or working papers prepared by the company to separate transmission and sub-transmission costs.
- e. A copy of the most recent load forecast study for the company. Forecasts for classes of major users are also requested if such forecasts are not included in the most recent study.
- f. A copy of the company's analysis and/or working papers supporting the selection of rating periods used in the PURPA 133 filing.
- g. A copy of the most recent loss of load probability study, or a similar study that would indicate times of day or season of the year when there are relatively high probabilities of a shortage of generation capacity.
- h. A copy of the company's most recent residential appliance saturation survey.

2. Generation and System Dispatch

- a. Provide a computer tape with the system lambda by hour for each hour in test year 1979. Similarly,



provide a computer tape with the hourly average energy cost for each hour in the test year. The information provided should be actual historical data, if available. Provide in same format as EEI annual load information. If historical data are unavailable, provide the estimated hourly costs (for the 8,760 hours) that formed the basis for the company's response in the PURPA 133 filing, Sections 290.202 (a) and 290.303 (a). Specify the format used.

- b. Daily dispatch logs showing, on an hourly basis, system load, company load, unit outputs (by unit), and external supply (by source), if available. If daily logs for the test year cannot be provided, provide a sample of five days: a "typical" day in each season and the day of system peak.
- c. Classify each unit as base, intermediate, or peaking depending on the unit's dispatch.
- d. Estimate the current annual cost of one megawatt of gas turbine capacity including installation, transmission associated with power supply (e.g., step-up transmission network), and all fixed charges applicable (return, taxes, insurance, etc.). Please show the calculation in detail including the components of the fixed charge rate applied.
- e. The fixed (annual) and variable (per kilowatt-hour) non-fuel operations and maintenance expense associated with one megawatt of new gas turbine capacity.

3. Distribution Information

- a. Please review the company's response to the PURPA 133 filing requirements, Section 290.305 (a) (1) and (2). Estimate the amounts of primary and secondary level and specify the customer related portion of each of these amounts, if any. If possible, project net additions for 1983 and 1984.
- b. Provide the current cost of a residential meter, including installation.

- c. Describe the meters used for each rate class. Include the (estimated) number of customers in each class with meters capable of recording time-of-use: (1) during two periods; (2) during more than two periods; (3) magnetic tape metered customers; (4) paper tape; or (5) others.
- d. Estimate the annual cost of the following types of meters:
  - 1. two period energy meter
  - 2. three period energy meter
  - 3. two period energy meter with indicating demand register (recording the highest demand in the billing period)
  - 4. two period energy meter capable of also metering (1) the maximum demands during certain hours of the day and (2) the maximum demand in the billing period

Provide these estimates for each meter and for each voltage level (if applicable). Please specify the cost of KVAR metering in items (c) and (d). The estimates should include all installation and operating expenses. Provide workpapers supporting the estimates.

#### 4. Miscellaneous

- a. Forecast changes in the number of customers by rate class for each of the next five years.
- b. The most recent schedule for percentage line losses by voltage level, if different from those reported in the PURPA 133 filing. Provide both energy and demand losses if available. Include any studies of losses by time-of-use.
- c. A bill frequency or similar analysis of billing determinants for each rate class. Provide billing determinants by month, if available.
- d. Provide estimates of demand elasticities (the percentage change in energy sales resulting from a one percent increase in the price of energy) used by the company. Such estimates may be used in load forecasting.

- e. A copy of contracts in effect with each intertie.
- f. A copy of each monthly bill or invoice for purchased power of interutility sales for the test year.
- g. State the date, time, and duration of each service interruption affecting customers taking interruptible service during the test year.
- h. Describe active load management programs currently in effect. Specify:
  - equipment used
  - criteria for interruption
  - number of customers by rate class

Data Request in Administrative Case #203 (c)

1. Studies

- a. A copy of the workpapers prepared by the company to determine the jurisdictional separation of plant, expenses, revenues, and taxes for test year 1979.
- b. A copy of the work papers prepared by the company to develop the allocation factors used in the class cost of service study for test year 1979. If not otherwise available, include a description of the weighting factors used in allocating metering costs, customer accounting costs, etc.
- c. The most recent analysis of the company's minimum distribution grid. Provide sufficient detail to reveal the components of the minimum grid. Specify the load that can be carried by each component.
- d. The most recent analysis and/or working papers prepared by the company to separate transmission and sub-transmission costs.
- e. A copy of the most recent load forecast study for the company and/or the Cincinnati Gas and Electric Company. Forecasts for classes of major users are also requested if such forecasts are not included in the most recent study.
- f. A copy of the company's analysis and/or working papers supporting the selection of rating periods used in the PURPA 133 filing.
- g. A copy of the most recent loss of load probability study, or a similar study that would indicate times of day or season of the year when there are relatively high probabilities of a shortage of generation capacity.

2. Generation and System Dispatch For CG & E

- a. Provide a computer tape with the system lambda by hour for each hour in test year 1979. Similarly, provide a computer tape with the hourly average energy cost for each hour in the test year. The information

provided should be actual historical data, if available. Provide in same format as EEI annual load information. If historical data are unavailable, provide the estimated hourly costs (for the 8,760 hours) that formed the basis for the company's response in the PURPA 133 filing, Sections 290.202 (a) and 290.303 (a). Specify the format used.

- b. Provide a computer tape of system loads (CG & E) during each hour in the test year. Provide in the EEI format.
- c. Daily dispatch logs showing, on an hourly basis, system load, company load, unit outputs (by unit), and external supply (by source), if available. If daily logs for the test year cannot be provided, provide a sample of five days: a "typical" day in each season and the day of system peak.
- d. Classify each unit of the CG & E system as base, intermediate, or peaking depending on the unit's dispatch.
- e. Estimate the current annual cost of one megawatt of gas turbine capacity including installation, transmission associated with power supply (e.g., step-up transmission network), and all fixed charges applicable (return, taxes, insurance, etc.). Please show the calculation in detail including the components of the fixed charge rate applied.
- f. The fixed (annual) and variable (per kilowatt-hour) non-fuel operations and maintenance expense associated with one megawatt of new gas turbine capacity.

3. Distribution Information

- a. Please review the company's response to the PURPA 133 filing requirements, Section 290.305 (a) (1) and (2). Estimate the amounts of primary and secondary level and specify the customer related portion of each of these amounts, if any. If possible, project net additions for 1983 and 1984.
- b. Provide the current cost of a residential meter, including installation.

- c. Describe the meters used for each rate class. Include the (estimated) number of customers in each class with meters capable of recording time-of-use: (1) during two periods; (2) during more than two periods; (3) magnetic tape metered customers; (4) paper tape; or (5) others.
- d. Estimate the annual cost of the following types of meters:
  - 1. two period energy meter
  - 2. three period energy meter
  - 3. two period energy meter with indicating demand register (recording the highest demand in the billing period)
  - 4. two period energy meter capable of also metering (1) the maximum demands during certain hours of the day and (2) the maximum demand in the billing period

Provide these estimates for each meter and for each voltage level (if applicable). Please specify the cost of KVAR metering in items (c) and (d). The estimates should include all installation and operating expenses. Provide workpapers supporting the estimates.

4. Miscellaneous

- a. Forecast changes in the number of customers by rate class for each of the next five years.
- b. The most recent schedule for percentage line losses by voltage level, if different from those reported in the PURPA 133 filing. Provide both energy and demand losses if available. Include any studies of losses by time-of-use.
- c. A bill frequency or similar analysis of billing determinants for each rate class. Provide billing determinants by month, if available.
- d. Provide estimates of demand elasticities (the percentage change in energy sales resulting from a one percent increase in the price of energy) used by the company. Such estimates may be used in load forecasting.

- e. A copy of contracts in effect with each intertie.
- f. A copy of each monthly bill or invoice for purchased power of interutility sales for the test year.
- g. State the date, time, and duration of each service interruption affecting customers taking interruptible service during the test year.
- h. Describe active load management programs currently in effect. Specify:
  - equipment used
  - criteria for interruption
  - number of customers by rate class
- i. A copy of the interchange agreement between ULH & P and CG & E in effect during the test year and a copy of the most recent agreement.

Data Request in Administrative Case #203 (d)1. Studies

- a. A copy of the workpapers prepared by the company to determine the jurisdictional separation of plant, expenses, revenues, and taxes for test year 1979.
- b. A copy of the work papers prepared by the company to develop the allocation factors used in the class cost of service study for test year 1979. If not otherwise available, include a description of the weighting factors used in allocating metering costs, customer accounting costs, etc.
- c. The most recent analysis of the company's minimum distribution grid. Provide sufficient detail to reveal the components of the minimum grid. Specify the load that can be carried by each component.
- d. The most recent analysis and/or working papers prepared by the company to separate transmission and sub-transmission costs.
- e. A copy of the most recent load forecast study for the company. Forecasts for classes of major users are also requested if such forecasts are not included in the most recent study.
- f. A copy of the company's analysis and/or working papers supporting the selection of rating periods used in the PURPA 133 filing.
- g. A copy of the most recent loss of load probability study, or a similar study that would indicate times of day or season of the year when there are relatively high probabilities of a shortage of generation capacity.
- h. A copy of the company's most recent residential appliance saturation survey. Include the most recent study for the AEP system, if available.

2. Generation and System Dispatch

- a. Provide a computer tape with the system lambda by hour for each hour in test year 1979. Similarly,



provide a computer tape with the hourly average energy cost for each hour in the test year. The information provided should be actual historical data, if available. Provide in same format as EEI annual load information. If historical data are unavailable, provide the estimated hourly costs (for the 8,760 hours) that formed the basis for the company's response in the PURPA 133 filing, Sections 290.202 (a) and 290.303 (a). Specify the format used.

- b. Provide a computer tape of system loads and company loads during each hour in the test year. Provide in the EEI format.
- c. Daily dispatch logs showing, on an hourly basis, system load, company load, unit outputs (by unit), and external supply (by source), if available. If daily logs for the test year cannot be provided, provide a sample of five days: a "typical" day in each season and the day of system peak.
- d. Classify each unit as base, intermediate, or peaking depending on the unit's dispatch.
- e. Estimate the current annual cost of one megawatt of gas turbine capacity including installation, transmission associated with power supply (e.g., step-up transmission network), and all fixed charges applicable (return, taxes, insurance, etc.). Please show the calculation in detail including the components of the fixed charge rate applied.
- f. The fixed (annual) and variable (per kilowatt-hour) non-fuel operations and maintenance expense associated with one megawatt of new gas turbine capacity.
- g. The company's response to Section 290.302 (g) of PURPA 133 states that "the generating unit most likely to be installed on the AEP system during the next ten years to meet increases in peak demand is a coal-fired generating unit." Please explain the basis for selecting a coal-fired unit rather than a combustion turbine

unit. Include prior testimony of Mr. Greg Vassell in other jurisdictions if the testimony is responsive to the request.

3. Distribution Information

- a. Please review the company's response to the PURPA 133 filing requirements, Section 290.305 (a) (1) and (2). Estimate the amounts of primary and secondary level and specify the customer related portion of each of these amounts, if any. If possible, project net additions for 1983 and 1984.
- b. Provide the current cost of a residential meter, including installation.
- c. Describe the meters used for each rate class. Include the (estimated) number of customers in each class with meters capable of recording time-of-use: (1) during two periods; (2) during more than two periods; (3) magnetic tape metered customers; (4) paper tape; or (5) others.
- d. Estimate the annual cost of the following types of meters:
  1. two period energy meter
  2. three period energy meter
  3. two period energy meter with indicating demand register (recording the highest demand in the billing period)
  4. two period energy meter capable of also metering (1) the maximum demands during certain hours of the day and (2) the maximum demand in the billing period

Provide these estimates for each meter and for each voltage level (if applicable). Please specify the cost of KVAR metering in items (c) and (d). The estimates should include all installation and operating expenses. Provide workpapers supporting the estimates.

4. Miscellaneous

- a. Forecast changes in the number of customers by rate class for each of the next five years.

- b. The most recent schedule for percentage line losses by voltage level, if different from those reported in the PURPA 133 filing. Provide both energy and demand losses if available. Include any studies of losses by time-of-use.
- c. A bill frequency or similar analysis of billing determinants for each rate class. Provide billing determinants by month, if available.
- d. Provide estimates of demand elasticities (the percentage change in energy sales resulting from a one percent increase in the price of energy) used by the company. Such estimates may be used in load forecasting.
- e. A copy of contracts in effect with each intertie.
- f. A copy of each monthly bill or invoice for purchased power of interutility sales for the test year.
- g. A copy of the company's 1979 FERC Form #1, the annual report.
- h. A copy of the workpapers supporting the annual carrying charge rates stated in the PURPA 133 filing, Section 290.307 (a).
- i. A copy of the interchange agreement in effect during the test year and a copy of the most recent agreement.